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ABSTRACT

To determine the media's role in hazard awareness, a study analyzed the content of media coverage of the 1982 Denver, Colorado blizzard, the worst storm in that region in 70 years. Data were collected from the two major daily newspapers and from four television stations. The study period began on December 21, about 48 hours before the first real storm warnings were issued, and continued through January 21, 1983. Results showed that Denver television stations and newspapers disseminated 1,366 separate stories--977 television stories and 389 newspaper articles--in some way related to the blizzard. There were relatively few analytic stories and fewer still investigative pieces. The majority of the stories concerned the disaster impact and the immediate post-disaster emergency response. While the style and content of the media blizzard coverage were highly event-oriented, the media paid little attention to the larger issues of community preparedness, coping, and hazard mitigation that the event raised. Thematically, the media tended to emphasize crisis, powerlessness, and individual helplessness. While a substantial minority of the stories portrayed individuals as capable of mitigating the hazard impact, the majority of the stories portrayed the individual--and even local government--as helpless against the onslaught of nature. (HOD)

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# Media Coverage of a Blizzard: Is the Message Helplessness?

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## Introduction

A general conclusion emerging from research on behavioral aspects of hazard management is that the mass media can play an important role in public learning about the nature and possible consequences of natural hazards (Saarinan, 1982; Sorensen, 1983). These roles are described by the National Research Council's Committee on Disasters and the Mass Media as: 1) preparing the public to meet emergencies; 2) providing mitigation, warning and coping information; 3) providing reassurance and a mode for grieving or assuaging guilt in the aftermath of a tragedy; 4) providing mobilizing information; 5) assessing the postdisaster period and the lessons that have been learned, and 6) providing a record of activities related to the natural hazard. Recent studies indeed indicate the public finds the mass media among the most useful sources of information about a variety of natural hazards (Sorensen, 1983; Wenger, 1980). In addition, scholarly research on mass communication indicates that the media can serve to set the community agenda in areas of political debate (McCombs and Shaw, 1972), and that (Sood, in Saarinen, 1982: 102):

> a "powerful effects" model is emerging, wherein mass communication is seen to have the potential for exerting strong influence on audiences. Mendelsohn and Maccoby and Farquhar show that if mass media campaigns are prepared carefully according to communication theory principles, present messages repeatedly over a period of time, target messages to specific audiences and tie message themes to a clearly specified campaign objective, then there is a good chance the campaign will have important effects on attitudes and behavior.

This research by hazard management scholars implies, and in some cases assumes, a purposeful use of the media. However, the very nature of news coupled with the demands of the newsgathering and production process may lead the media to distort natural hazard reports in certain specific ways (McQuail, 1983: 219):

> However, the message of theory seems to be that we might better regard media content as a unique cultural form, a "media culture" fashioned according to its own conventions and codes and forming a more or less independent element in the social reality rather than a message about that social reality. Thus, even where media act as carriers for other institutions, they tend to alter the substance, to conform to the demands of "media culture".

Specifically, studies focusing on actual media coverage of natural hazards have found that the accuracy and quantity of media warning messages varies directly with media contact with crucial government agencies (Sorenson, 1982), and that many community plans for disaster preparedness seem to place contact with the media in a somewhat secondary role (Clark, Carter and Leik, 1979). Accurate transmission of the message to the public is the second crucial link in the chain. While scholars give the media generally high marks for reportge of the "large facts" of natural hazards, errors in the coverage of smaller details, such as crowd estimates, were found a significant portion of the time (Scanlon, 1978). In addition, researchers have discovered that newspaper coverage of natural disasters tends to include many stories for which no source is cited, while radio stations tend to withhold information based on a perception that the public could be easily panicked in a natural disaster (Kueneman and Wright, 1975).

It would appear that the scholarly research on the media's role in hazard awareness seems to point in two different directions. On the one hand, hazards researchers insist that the media can be one of the most effective means for public education about natural hazards. Such a use of the media involves rather complete journalistic access to and use of messages designed to inform the public. On the other hand, analysis of actual media messages about natural hazards indicates that some of the messages the public needs to receive are never made available to the media or are reported inaccurately or

in such a way as to make some members of the public skeptical about their veracity.

It is apparent that some broad understanding of both the quantity and content of natural hazards messages conveyed by the media may be central to developing a more complete understanding of the media's role in public education about natural hazards. A content analysis of media coverage of the 1982 Denver blizzard provided some important insights into the sort of message the media disseminated.

## A Generalized Media Role

### Natural Hazards as News

No scholarly data exist on the relative importance of natural disasters as news events. Part of this lack is due to the fact that every "news day" is different, and that an event which might be the top news story on one day might not be among the top five or ten stories the next day. However, anecdotal evidence indicates that natural hazards are considered newsworthy by journalists (Needham and Nelson, 1977; Wall and Webster, 1980; Rogers and Sood, 1981).

Thus, it is important to describe first the quantity and second the type of news coverage afforded natural hazards. Quick onset natural hazards such as floods and severe weather systems are considered "hard" or "breaking" news (Metzler, 1978; Park 1940). Communications research indicates that "hard" news events form a staple of television news reporting (Budd, Thorp and Donohew, 1967), while the print media, particularly newspapers, provide more analysis and investigative pieces. Thus, research would indicate that television coverage of natural hazards would focus on the immediate event while newspaper coverage would include not only event-oriented stories but also relatively more investigative and analytic coverage.

In addition to describing the quantity and type of coverage provided by the media, it is also important to determine if certain sorts of critical information are included in news stories about natural hazards. Many hazard researchers have urged information campaigns that would require dissemination of warning messages about a particular event, utilizing the "watchdog" or "warning" role of the media (Lasswell, 1948; McQuail, 1983). Analysis of whether news stories contain specific definitions of an event--for example the formal definition of a blizzard--would provide insight into whether the media is performing its "watchdog" role. Similarly, analysis of the phase of the natural hazard--predisaster hazard mitigation and preparedness, predisaster hazard prediction and warning, disaster impact, immediate post-impact emergency response, or long-term rehabilitation and reconstruction--into which a story fits may also provide empirical data on the media's role in coverage of natural hazards as determined by the media. Results of such analysis may indicate that current definitions of news as used by media practitioners are at odds with hazard researchers' insistence that the media should convey warning messages to the public.

It also is important to evaluate the "believability" of the messages provided by the media. While believability ultimately is determined by the reader or viewer, citation of sources--and the types of sources cited--may provide a more indirect measure of reportage believability.

The Message Conveyed

While the foregoing issues outline the skeleton of media messages, they do little to flesh out the body of the message itself. For that, it is necessary to examine the content of the messages themselves--to ask not only what sort of information is being conveyed, but also the tone of that information.

The underlying assumption of many hazards researchers is that information provided in various public awareness campaigns should include the attitude that it is possible for individual members of the public to mitigate the impact of natural hazards (Sood, in Saarinen, 1982: 107):

> Finally, some public information campaigns have produced the desired outcomes. Campaigns which realistically spell out the risks of natural hazards are valuable since they enhance the probability of a desired public response to warnings (Clark and Carter, 1980). . . . The social marketing framework used in these successful campaigns can be adapted to fit the special characteristics of hazards issues.

To ascertain if such an underlying theme is present in reportage of natural disasters, individual news accounts may be analyzed based on thematic content. Communication researchers have studied television news based on the premise that "television news, to the extent that it is a medium for the communication of myths, can be understood, in this sense, as a narrative that explains or renders in fictive terms perceptions of our social environments" (Smith, 1979: 75). The presence or absence of themes which portray the individual actor as "powerful" or "capable of doing something" as opposed to "helpless" or "at the mercy of outside forces" would provide some indication of the more subtle messages included in news accounts of natural disasters.

A somewhat different approach to the possible effect of media reportage of natural disasters has been outlined by J. P. Reser, who maintains media reportage of natural disasters enhances an already existing individual psychological loss of control (Reser, 1982). Such a loss of control, Reser notes, is a central component of "learned helplessness" (Seligman, 1975) and results in "situational passivity once a disaster has struck" (Reser, 1982: 33). Communications scholars who have studied the thematic presence of "learned helplessness" in the network news report "the average viewer of network news

encounters 'helplessness' models which are in degree somewhere between mild and moderate, closer indeed to moderate 'helplessness'" (Levine, 1977: 105).

The presence of thematic content which portrays the individual as powerful or capable of doing something about natural hazards and the presence of "learned helplessness" in news reports about natural hazards may have important implications for the messages--and hence the effect of those messages--on the public.

## The Event and Data Collection

### The Event

The blizzard that struck metropolitan Denver, Colorado, the day before Christmas, 1982, was the worst snow storm in that region in 70 years. According to statistics compiled by the National Weather Service, 20 to 40 inches of snow fell in the Denver area during a 24-hour period, accompanied by winds of up to 60 m.p.h., a wind chill factor of -40 degrees Fahrenheit, and drifts accumulating as high as eight feet. Many of the major streets in the metropolitan area remained impassible for as long as 48 hours, and residential neighborhoods took as long as a week to dig out. Traffic at Stapleton International Airport, the seventh busiest such facility in the world, ground to a complete halt for part of a day and suffered a substantial reduction in service for 72 hours. The weather service issued its first special weather statement about the impending storm at 4:45 a.m. on December 22, with repeated statements at 2:00 p.m. that same day and at 4:00 p.m. on December 23, then escalating to a blizzard watch at 3:10 a.m. December 23, and finally a blizzard warning after 4:00 p.m. on December 23. The first flake of snow associated with the storm fell at 11:24 p.m. on December 23.

Data Collection

The Denver metropolitan area has two major daily newspapers and four television stations. Coverage in the Rocky Mountain News and Denver Post reaches most residents of the metropolitan area who read newspapers. The broadcast area of the four television stations includes the entire state of Colorado. While there are newscasts throughout the day, the stations themselves place the most emphasis--in terms of ratings--on their 5:00 p.m. and 10:00 p.m. newscasts. Therefore, only stories from those newscasts were analyzed. The study period began on December 21, about 48 hours before the first real warnings about the storm were issued, and continued through January 21.

There were, however, several problems with data collection. Because of the severity of the storm, both newspapers failed to publish on December 25. Therefore, only 30 days of newspaper stories were included in the analysis. The weather reports from all four television stations were done "ad lib" without a script, and thus could not be included in the analysis. In addition, all video tape at the television stations was destroyed two weeks after the reports aired--a standard station policy. For this reason, it was decided that the story analysis would be based on the scripts but would not include a separate analysis of the video. Finally, one television station had only a 30-minute late evening newscast, while the other three aired 60-minute newscasts. Thus, all television data were not precisely comparable.

## Results

News Coverage: Quantity and Prominance

During the 31 days of the study, Denver television stations and newspapers disseminated 1,366 separate stories--977 television stories and 389 newspaper articles--in some way related to the blizzard. The two daily news-

papers ran a total of 4,175 column inches of stories about the blizzard--the equivalent of 77 full newspaper pages of blizzard coverage.

However, sheer number of stories is not the only indication of the importance of a particular news event. How a story is played--that is, its location in a newscast or on a newspaper page, also indicates the relative importance of a particular event.

Newspaper studies have indicated that the most important story on a page is placed, first, in the upper left-hand page quadrant, or second, in the upper right-hand quadrant. In addition, the more important a newspaper story, the more likely it is to include a picture or a line drawing (art). Of the 389 newspaper stories, 26 percent (N=102) were placed in the upper left-hand quadrant, 18 percent (N=73) in the upper right-hand quadrant, and an additional 18 percent (N=72) played with headlines running aross the entire top of the page. Thus, more than 63 percent of the newspaper stories (N=247) were given prominent page play. Art was used with 43 percent (N=163) of the articles.

Television news gave the blizzard similar prominance. Of the 975 television stories included in the study, more than 32 percent (N=321) were among the top five stories in the newscast, while 73.4 percent (N=716) of the stories included some form of video tape, on-the-spot video, or both. Such an extensive use of video indicates the importance of the story.

News Coverage: Basic Information and Type

While the foregoing indicates the news media provided extensive and prominent blizzard coverage, certain kinds of information were not provided. About 94 percent (N=1,288) of the stories did not contain any definition--either paraphrased or precise--of a blizzard. All but one of the stories containing a definition appeared in newspapers.

Only 4.1 percent (N=57) of the stories were considered to be in the predisaster hazard mitigation and preparedness or predisaster hazard prediction and warning phases of the event. On the other hand, almost half--47.2 percent (N=645)--of the stories dealt with the immediate post impact emergency response, while an additional 29.1 percent (N=397) of the stories dealt with the impact of the blizzard. About 12.3 percent (N=168) dealt with long term rehabilitation and reconstruction. It was impossible to determine with what phase of the disaster 7.2 percent (N=99) of the stories were concerned.

The type of coverage provided also reflected media emphasis on the event and the immediate response to the blizzard. About 69.8 percent (N=953) of the blizzard stories were either hard news, features (including human interest stories) or community bulletin board type stories. Only a relatively few stories were devoted to analysis (see Table 1).

(Insert Table 1 about here.)

Differences in Broadcast and Print Coverage

While both broadcast and print media tended to give the storm similar emphasis, there were distinct differences in the type of coverage each medium provided.

The first significant difference was found in the number of stories printed or broadcast about the five separate phases of the natural hazard. Television provided relatively fewer stories than expected in the predisaster hazard mitigation and preparedness, predisaster hazard prediction and warning, and disaster impact phases of the event. The newspapers provided relatively more coverage of these three phases. Such a result is particularly noteworthy because neither newspaper published the day immediately after the storm, editions that would be expected to include many stories on the disaster impact.

However, the broadcast medium provided relatively more stories than anticipated in the long term rehabilitation and reconstruction phase of the event, while newspapers provided fewer stories than expected during this phase (4.24 of the total Chi square value). Coverage of the immediate post impact phase of the disaster was about as expected for each medium. The overall differences in coverage were significant at the $p<.05$ level (see Table 2).

(Insert Table 2 about here.)

Differences in the type of coverage provided by each medium were even more marked ($p<.0001$). The broadcast medium provided relatively more hard news coverage of the event than did newspapers. However, the newspapers provided more feature and human interest stories about the blizzard than did the television stations (21.94 of the total Chi square value).

The television stations also provided significantly more community service or bulletin board type stories than did the newspapers, while the newspapers provided more analysis of the event (14.78 of the total Chi square value). Both media provided about equal numbers of political and investigative pieces.

(Insert Table 3 about here.)

The different sort of coverage provided by the two media also was reflected in sources cited in various stories. Of all the stories written or broadcast about the storm, 43.9 percent did not include a specific source. However, some types of stories--letters to the editor, editorials, editorial cartoons and teases--could not reasonably be expected to include any source citation. If these stories are deleted from the total number, then 68.6 percent of those stories where a specific source could be expected to be cited did include at least one specific citation. Of that group, all newspaper stories for which a source could be expected to be cited included such a

citation, while 59.9 percent of the television stories that could have been expected to include a specific source citation contained at least one.

Citation of sources reflected the heavy reliance by the broadcast medium on official government sources--either by name or by title--to the exclusion of most other sources. The newspapers on the other hand relied on a broader variety of sources, although government officials were still the single most frequently cited sources in newspaper accounts.

(Insert Table 4 about here.)

Thematic Content

While the thematic content of stories was more difficult to determine, both differences and similarities between the two media emerged in the analysis. Thematic content was analyzed three different ways: first according to overall story theme, second according to a 15-item list of themes developed from Jungian archetypes, and third by ranking each story on a learned helplessness scale.

In the overall thematic content of the stories, 24.8 percent (N=339) included the central theme that there was a crisis and that individuals could do little to modify the impact of the storm. About 11.1 percent (N=152) of the stories included the central thematic idea that local authorities could and should be taking action to modify the storm impact, while about 44.4 percent of the stories (N=607) included both thematic elements. About 19.6 (N=268) of the stories were impossible to classify using this thematic schema.

When the Jungian archetype scale was employed, the thematic content of the stories broke down into two overall categories: one that portrayed individual actors as powerful--including the archetypes of progress, hero rescues, brotherhood, and community spirit; and those that portrayed the individual as essentially helpless--including the archetypes of nature, destruction,

helplessness, Armageddon and corruption. Of the 1,366 stories printed or broadcast about the storm, 1,015 fit into one of these two broad groupings--32.2 percent (N=327) in the individual actor as powerful grouping and 67.8 percent into the individual as helpless grouping. There were no significant differences between stories aired over television or printed in the newspapers based on these two broad groupings of thematic analysis.

However, television and newspaper coverage of the storm did show some significant differences when analyzed thematically along a learned helplessness scale. Television tended to air relatively more stories that ranked higher on the learned helplessness scale than did the newspapers ($p<.001$). However, the vast majority of stories printed or broadcast ranked at either 3 or 4 on the learned helplessness scale.

(Insert Table 5 about here.)

## Discussion

The foregoing results indicate that the mass media--specifically newspapers and television--tend to cover natural hazards in a fashion similar to many other news events.

First, both media concentrated on the event itself. This concentration is reflected not only in the predominance of hard news stories about the blizzard--particularly on television--but also in the large number of feature, human interest and community bulletin board stories disseminated by both media. There were relatively few analytic stories, even in the two newspapers, and fewer still investigative pieces. The media's concentration on the event itself also is reflected by the phases of the disaster into which media reportage fit. There were relatively few warning stories (although the number of warning stories broadcast on television may be artificially deflated by the scriptless nature of the television weathercasts), while the majority of the

stories (68.2 percent) concerned the disaster impact and the immediate post disaster emergency response. While a heartening number of the stories fit into the long term rehabilitation phase (N=148), closer analysis indicates that many of these stories concerned the impact Denver's snow-clogged streets would have on the upcoming city mayoral election (in which the incumbent lost), rather than on the non-political issues raised by the blizzard.

Two somewhat unexpected results in the type of coverage afforded the blizzard are worth further notation. First, literature on mass communication generally has asserted that newspapers serve as community bulletin boards, announcing such events as forthcoming meetings, etc. Television is generally assumed to have neither the air time for nor the interest in such relatively minor stories. However, the blizzard coverage indicates that in times of emergency, television becomes the community bulletin board. This may be particularly true when conditions prohibit newspapers from reaching their readers. Television, because of its ability to constantly revise its news, may be uniquely suited to the community bulletin board role during the course of a natural hazard.

Second, it is somewhat noteworthy that both media aired about equal numbers of investigative pieces. The general literature on mass communication would indicate that investigative reports would be the province of the print medium. A cynical analysis would assert that television merely aired newspaper investigative stories a day later, but additional research is needed to determine the accuracy of this assertion.

Even with these two exceptions in mind, the style and content of media blizzard coverage indicates the media were highly event-oriented in their reportage. The media covered the blizzard itself, but paid little attention to the larger issues of community preparedness, coping, and hazard mitigation

that the event raised. While this criticism of the media is not unique, it is of particular import to hazard researchers who place great emphasis on warning and preparedness messages. These messages--at least during the onset and aftermath of a quick onset natural hazard--may become lost in a blizzard of other reports.

Perhaps even more telling, however, is the thematic content of the stories. Thematically, the media tended to emphasize crisis, powerlessness and individual helplessness. While a substantial minority of stories portrayed individuals as capable of mitigating the hazard impact, the majority of the stories portrayed the individual--and even local government--as helpless against the onslaught of nature.

There are perhaps two reasons for such a thematic emphasis. First, such thematic content may reflect reality. It can be argued that there is little a single individual can do when faced with as much as 32 inches of snow in a 24-hour period--other than wait for it to melt. In this sense, the blizzard reportage may have been an accurate reflection of the reality facing most Denver residents on Christmas day. Second, such a thematic emphasis on crisis fits well with existing definitions of news. In this sense, the blizzard reportage may be conforming to a larger media reality--one in which helplessness, conflict and sharply delineated events play the crucial role. It should be noted that national newscasts rank in the moderate range on the learned helplessness scale. The reality of the blizzard, coupled with the already existing definitions of news, thus may combine to produce thematic media content concerning natural hazards that is somewhat psychologically disquieting.

However, such thematic content also raises the larger question: what message is it the media really convey? Hazard researchers have placed

emphasis on the overt message--that is, warning and preparedness messages. However, it is apparent that in the reportage of a natural hazard, a covert message also is conveyed. That message, at least in the majority of blizzard stories, is that the individual actor is relatively powerless or helpless. The crucial issue thus becomes which message the audience remembers. If the memorable messages are of warning and preparedness, then hazard researchers are correct in their assertions that the mass media are among the most effective tools in public education about natural hazards. If, on the other hand, the covert message of helplessness is the most memorable, then hazard scholars need to focus their efforts not only on the dissemination of warning messages themselves but also on helping the mass media become more effective, less event-oriented reporters of natural hazards. Such a shift in emphasis from event-oriented to issue-oriented coverage may be one key in providing memorable messages that educate the public about hazard mitigation as well as hazard impact.

## Implications for Further Research

The current study results suggest additional research in two areas. First, a comprehensive content analysis of all media messages disseminated during a quick onset natural hazard should be conducted. Particular attention should be paid to the video tape that accompanies television stories. These "pictures" may provide even more telling thematic data than the "words" of scripts.

Second, scholars should investigate reader and viewer memories of and responses to media messages about natural hazards. By learning what it is an audience remembers about natural hazard reportage, and by weighing the impact of that reportage with other factors such as personal experience with the natural hazard, it may be possible to determine what constitutes a memorable

media message. Such an understanding could then provide hazard researchers with additional means of conveying warning, preparedness, coping and hazard mitigation information to the public in such a way that the message will be more readily recalled.

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Table 1

Type of Story

| Story Type | N | Percent |
|---|---|---|
| Hard news | 503 | 36.6 |
| Feature | 164 | 11.9 |
| Human interest | 86 | 6.3 |
| Community bulletin | 110 | 8.0 |
| Hard news - political* | 90 | 6.5 |
| Analysis | 6 | 0.4 |
| Political analysis* | 12 | 0.9 |
| Investigative | 4 | 0.3 |
| Political invetigative* | 10 | 0.7 |
| Editorial | 15 | 1.1 |
| Letter to the editor | 64 | 4.7 |
| Editorial cartoon | 4 | 0.3 |
| Tease** | 169 | 12.2 |
| Other | 128 | 9.9 |
| | 1366 | 100.0 |

*Political stories were broken out because the city government's response to the blizzard became an issue in the Denver mayoral race.

**Teases are one or two sentence transitions used to heighten audience interest between various parts of a television newscast. For purposes of this analysis, they were coded as separate stories.

Table 2

Television and Newspapers: Coverage by Phase of Disaster

| Medium | Disaster Phase | | | | | | |
|---|---|---|---|---|---|---|---|
| | Pre-Disaster | Prediction & Warning | Impact | Response | Long-Term Rehabilitation | Impossible To Determine | N |
| Television | 10 | 13 | 225 | 405 | 115 | 42 | 810 |
| Newspapers | 9 | 11 | 120 | 182 | 33 | 22 | 377 |
| | 19 | 24 | 345 | 587 | 148 | 64 | 1187* |

Chi square = 12.25 with 5 degrees of freedom

Significance = .0315

*Teases were omitted from this analysis

Table 3

Television and Newspapers: Type of Coverage

| Medium | Story Type | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Hard News | Features | Human Interest | Community Bulletin Board | Political | Analysis | Investigative | N |
| Television | 389 | 99 | 52 | 92 | 69 | 6 | 3 | 710 |
| Newspapers | 105 | 65 | 34 | 18 | 21 | 12 | 1 | 256 |
| | 494 | 164 | 86 | 110 | 90 | 18 | 4 | 966* |

Chi square = 50.18 with 6 degrees of freedom

Significance = .0000

*Only those story types common to both media were used.

Table 4

Television and Newspaper Coverage: Sources Cited

| Medium | Source: Government Official** | Interview - Person on the Street | Non-Government Official** | Reporter Observation | Other | N |
|---|---|---|---|---|---|---|
| Television | 489 | 106 | 87 | 66 | 62 | 810 |
| Newspapers | 187 | 60 | 78 | 48 | 14 | 387 |
| | 676 | 166 | 165 | 114 | 76 | 1197* |

Chi square = 36.34 with 4 degrees of freedom

Significance = .0000

*Teases were omitted in this analysis.

**Category includes citation by both name and title, and by title only. Non-Government Official would include citations such as "hospital spokesperson."

Table 5

Television and Newspaper Coverage: Thematic Use of Learned Helplessness

| Medium | Learned Helplessness Scale | | | | | |
|---|---|---|---|---|---|---|
| | Not Relevant | Mild | Moderate | Strong | Extreme | N |
| Television | 28 | 11 | 117 | 195 | 459 | 810 |
| Newspapers | 25 | 18 | 65 | 87 | 192 | 387 |
| | 53 | 29 | 182 | 282 | 651 | 1197* |

Chi square = 20.687 with 4 degrees of freedom

Significance = .0004

*Because of their short length, teases were omitted from this analysis.